IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of
Klaus MÜELLER et al.
Serial No.: 09/456,516
Filed: December 08, 1999
For: LAYERED COMPOSITE BASED ON THERMOPLASTIC POLYMERS

DECLARATION

I, Klaus MUELLER, declare and state that:

1. I am a resident of the Federal Republic of Germany.

2. I am a citizen of the Federal Republic of Germany.

3. I am a mechanical engineer for polymer processing and received the master degree in engineering which was awarded in 1982

4. I have been employed by Hoechst Aktiengesellschaft located at Frankfurt/M., Germany, since 1970. At Basell, my current title is Development Engineer.

5. I have been working in the development group evaluating new applications for polymer compositions since 1982. I am the Klaus MÜLLER who is the inventor first named in application SN 09/456,516 and I am therefore acquainted with the subject matter disclosed and claimed therein.

6. In light of my knowledge of the technical background in the pertinent technology and in light of my practical experience in this field I consider myself

qualified to conceive comparative experiments, to conduct such experiments or to have such experiments conducted according to my instructions, and to interpret the results obtained in such experiments from the standpoint of a person having ordinary skill in the art of composites.

7. I have studied the Office Actions which issued in application SN 09/456 516 on Sept. 25, 2002, and on April 25, 2003, and I have studied the prior art applied by the Examiner, with a particular focus on the teaching of the Johnson et al. reference (= US 5,139,854). It is my understanding that the Examiner considers it obvious to apply a decorative layer in accordance with the definition provided in claim 2 because Johnson et al. teach a composite wherein a decorative layer and a heat cured layer are applied to one side of a backing layer. I understand that the Examiner asserts in this context that the application of an additional decorative layer and heat cured layer on the second side of the backing layer can be expected to provide for a layered composite which has properties that are essential similar to the properties of a layered composite wherein only one side of the backing is covered by a decorative layer and a heat cured layer.

To show that the expectation of essential similar properties of the two different layered composites is **not met** when the properties of a composite in accordance with Johnson et al.'s disclosure and a composite in accordance with the definition provided in claim 2 of application SN 09/456,516 is compared, I have conceived the following experiments. The experiments were conducted under my supervision in accordance with the specifications given by me.

8. Several layered composites have been prepared comprising a backing layer of different thermoplastic polymer and a decorative layer placed thereon and a heat-cured layer placed thereon or, alternatively, a metal layer placed on the backing layer and a heat-cured layer placed thereon by heating the thermoplastic polymer and injecting the heated polymer at an injection pressure of 110 N/cm^2 into a shallow injection-moulding compartment into which the laminate of the decorative layer or the metal layer and the overlay had been placed, previously. A pressure of 50 N/cm^2 was

maintained whilst the mould was cooled to a temperature of about 80 °C within a time period of 2 min. Subsequently, the injection-moulding compartment was opened and the resulting composite was removed. A test was performed to determine the tensile modulus in [MPa] according to the standard measurement method described in ISO 527-1,2. The results are illustrated in the Table following later.

9. Several other layered composites have been prepared comprising one backing layer of different thermoplastic polymers and two decorative layers placed thereon and two heat-cured layers placed thereon or, alternatively, two metal layers placed on both sides of the backing layer and two heat-cured layers placed on top of the metal layers by heating the thermoplastic polymer and injecting the heated polymer at an injection pressure of 110 N/cm² into a shallow injection-moulding compartment into which two laminates of the decorative layers or the metal layers and the overlay had been placed, previously, on both sides. A pressure of 60 N/cm² was maintained whilst the mould was cooled to a temperature of about 80 °C within a time period of 2 min. Subsequently, the injection-moulding compartment was opened and the resulting composite was removed. Again, a test was performed to determine the tensile modulus in [MPa] according to the standard measurement method described in ISO 527-1,2. The results are illustrated in the following TABLE.

10. TABLE:

Tensile Modulus in [MPa] according to ISO 527-1,2	backing layer without cover layer	Mono-layer Injection			2-layer injection		
		Decor 0,2 mm	Alumium 0,2 mm	steel 0,2 mm	Decor 0,2 mm	Alumium 0,2 mm	steel 0,2 mm
Makrolon (PC)	2400	2900	3500	3900	3500	4200	5500
Polyamid PA 6 (30% Glass fiber)	6000	6400	6900	7300	7000	7800	8500
Polyamid PA 6 (50% Glass fiber)	14000	14800	15300	15900	15400	16100	17900
Polyamid PA 6 (n n reinf rc d)	3000	3700	4300	4900	4100	4900	5800
Polyamid PA 6 (15% Glass fiber)	6000	6200	6800	7100	6900	7700	8300

Polyamid PA 6 (30% Glass fib r/ Mineral)	6000	6400	7100	7900	7100	7800	8400
ABS E 211	2500	2800	3400	4100	3500	4400	5200
ABS (16% Glass fiber)	5500	5900	6300	6800	6300	7100	8000
SAN unverstärkt	3500	3900	4500	5100	4300	4900	5800
PC / ABS Bayblend (non reinforced)	2400	2700	3300	3900	3100	3900	4500
PC / ABS Bayblend (10% Glass fiber)	4100	4500	4900	5300	4900	5800	6400
PC / ABS Bayblend (20% Glass fiber)	5800	6200	6800	7300	6700	7600	8500
ABS / Polyamid Blend	1800	2200	2700	3200	2600	3500	4300
ABS / Polyamid (15% Glass fiber)	4800	5200	5900	6400	5700	6400	7100
ABS / Polyamid (10% Mineral reinforced)	3200	3700	4200	4800	3900	4900	5500
Polyamid PA 6.6 (non reinforced)	2800	3400	3900	4300	3700	4500	5400
Polyamid PA 6.6 (15% Glass fiber)	6600	6900	7300	7900	7500	8300	9100
Polyamid PA 6.6 (30% Glass fiber)	9500	9900	10300	10900	10400	11200	12100
Polyamid PA 6.6 (30% Glass fiber/Mineral)	6300	6800	7300	7900	7100	7900	8800
PBT (non reinforced)	2600	2900	3300	3800	3400	4200	5100
PBT (10% Glass fiber)	5000	5400	5900	6600	5900	6500	7400
PBT (30% Glass fiber)	10000	10400	11200	11900	10900	11700	12600
PBT (20% Mikro-Glass balls)	3300	3700	4200	4700	4100	4900	5700
PBT (30%Glass balls/Glass fibers)	7500	7900	8300	8800	8400	9200	10100
PC / PET Blend (10% Mineral)	3000	3500	3900	4400	3900	4700	5600
PBT / PC Blend (non reinforced)	1700	2100	2500	2900	2600	3500	4400
PBT / PET Blend (45% Glass fiber)	17000	17400	17900	18400	17900	18700	19600

11. The data collected in the foregoing experiments therefore clearly corroborate that the expectation to find essentially similar properties for a layered composite in accordance with Johnson et al.'s disclosure and a layered composite according to the definition provided in claim 2 of application SN 09/456,516 is not met.

12. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signed at Frankfurt/M., Germany,

By: Klaus Müller

Date: October 2, 2003

Title: Development Engineer